

The Honorable Commissioner of Patents
and Trademarks

Page 3

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method of radio resource management comprising the steps of:

determining periodically a network cost for current network blocking rates for data and voice traffic; in dependence upon based on predetermined target blocking rates, ~~determine a network cost for the current blocking rates;~~ and

~~adjusting partitioning a partition~~ of voice and data traffic to ~~lower~~ minimize the network cost.

2. (cancelled)
3. (original) A method as claimed in claim 1 wherein the adjusting step adjusts ~~partitioning the partition~~ of voice and data traffic iteratively.
4. (currently amended) A method as claimed in claim 1 wherein ~~the determining step includes a step of evaluating the network cost written as is~~ determined as:

$$Cost = W_v \times [f_v(T_v, T_d) - P_{nv}^*]^P + W_d \times [f_d(T_v, T_d) - P_{nd}^*]^P$$

where:

- T_v and T_d are maximum fractions of resource partitioning values for voice and data, respectively;

The Honorable Commissioner of Patents
and Trademarks

Page 4

- W_v and W_d are positive constants representing the relative weighing of voice vs. data;
- $f_v(T_v, T_d)$ and $f_d(T_v, T_d)$ are the current estimated blocking rates for voice and data traffic, respectively;
- P_{Bv}^* and P_{Bd}^* are the target blocking rate for voice and data respectively;
- P is a positive number; and
- ~~The~~ the function $[x]$ is equal to x for positive x and is equal to 0 for non-positive x .

5. (original) A method as claimed in claim 4 further comprising the a step of updating the partition of voice and data determining based on the value of the ~~evaluated network cost if partitions of voice and data are updated.~~

6. (currently amended) A method of radio resource arrangement comprising the step steps of:

receiving a request for a data burst to be transmitted;

determining power requirement for ~~a the data burst to be transmitted at~~ a plurality of possible transmission rates;

and

transmitting ~~a the data burst in dependence upon its data rate~~ having a higher maximum transmission rate and its relative minimum power requirement being lower than other data bursts.

7 - 8. (cancelled)

9. (currently amended) A method as claimed in claim 6 wherein ~~a the~~ data burst is chosen ~~to be served~~ based on a comparative decision amongst currently contending data burst users.

The Honorable Commissioner of Patents
and Trademarks

Page 5

10. (currently amended) A method as claimed in claim 7-6 further comprising the step of storing the data burst requests in queues in dependence upon based on priority levels.

11. (currently amended) A method as claimed in claim 10 further comprising a the step of sorting queues assigning a highest priority to the such data burst requests serviceable the queue that can be served at a maximum rate with a minimum power requirement is given the highest priority.

12. (currently amended) A method of radio resource management comprising the step steps of:

assigning a maximum burst rate and a corresponding minimum burst duration to a user in a wireless network with a plurality of data users;

equalizing a rate of transmitted information by adaptively allocating the user a second burst duration with a corresponding second burst rate, the second burst rate being lower than the maximum burst rate, so that the product of the second burst rate and the second burst duration is equal to the product of the maximum burst rate and the corresponding minimum burst, equalizing channel interference in a wireless network by equalizing the rate of information transmitted by different users.

13. (cancelled)

14. (currently amended) A method of radio resource management comprising the step steps of:

measuring an existing interference for an active user in a wireless network with a plurality of users having a pool of burst rates; and

granting a highest possible burst rate for transmission from the pool of burst rates without adding significantly to the interference level.

The Honorable Commissioner of Patents
and Trademarks

Page 6

~~data burst rates pool size is determined by the interference
experienced by active users.~~

15. (currently amended) A method as claimed in claim 14 wherein ~~network~~
the interference is measured and reported to ~~the a~~ controller.

16. (currently amended) A method as claimed in claim 14 further
comprising the step of wherein excluding high burst rates elements of in the
pool are excluded in the burst rate assignment from transmission, when
channel the interference is high.

17. (currently amended) A method as claimed in claim 14 further
comprising ~~a the~~ step of expanding the pool of burst rate size to include high
burst rates for transmission, when ~~channel the~~ interference is low.

18. (currently amended) A method of radio resource management
comprising the ~~step~~ steps of:

computing an ordered list of available transmission rates for an active
user in a wireless network with a plurality of users;

receiving a request for a transmission of a burst rate data burst from the
user;

obtaining a quality of service requirement for the transmission of the
data burst;

acquiring a buffer status for the transmission of the data burst;

selecting a lowest rate from the ordered list;

calculating a required time for the transmission of the data burst using
the lowest rate; and

transmitting the data burst

The Honorable Commissioner of Patents
and Trademarks

Page 7

whereby the required time is below an allowed maximum burst duration.

~~is determined based on traffic delay constraint.~~

19. (currently amended) A method as claimed in claim 18 further comprising the steps of:

selecting a next lowest rate from the ordered list; and

calculating a next required time for the transmission of the data burst using the next lowest rate;

whereby the required time is above and the next required time is below the allowed maximum burst duration.

~~wherein lowest burst rate is determined to satisfy traffic delay constraint.~~

20. (cancelled)

21. (original) A method of radio resource management comprising the step of determining if an emergency burst transmission can be granted whereby power is borrowed.

22. (currently amended) A method as claimed in claim 21 wherein the determining step further comprises the step of determining ~~determines~~ if an emergency burst can be granted given based on the time since the last emergency burst and, if the a waiting data user has been prevented from obtaining burst channels.

23. (currently amended) A method as claimed in claim 22 wherein the determining step further comprises the steps of calculating ~~calculates~~ the power available from other users and the power required by the waiting data user for a burst and, ~~determines~~ determining if sufficient power is available to

The Honorable Commissioner of Patents
and Trademarks

Page 8

meet ~~the data user's~~ burst requirements of the waiting data user.

24. (currently amended) A method as claimed in claim 21 further comprising the ~~step~~ steps of calculating the power required by ~~the a~~ waiting data user for other burst rates if ~~the a~~ first burst rate selected cannot be granted and comparing ~~this the required power requirement~~ with the power available from other users and; determining if sufficient power is available to meet ~~the data user's~~ burst requirements of the waiting data user.

25. (currently amended) A method as claimed in claim 21 further comprising the steps of ~~temporarily~~ reassigning temporarily an emergency burst ~~has been sent to a the waiting data user's burst channel of a waiting data user~~ for a predetermined time and; ~~then~~ returning power to ~~the other users once after sending the emergency burst has been sent~~.

26. (currently amended) A method as claimed in claim 21 further comprising the steps of ~~temporarily~~ reassigning temporarily an emergency burst ~~the power from sufficient other users to the waiting data user's a burst channel of a waiting data user~~ for a predetermined quantity of data and; ~~then~~ returning power to ~~the other users once after sending the emergency burst has been sent~~.